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Hyatt

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(54) **DUAL MODE HEADPHONES AND METHODS FOR CONSTRUCTING THE SAME**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1062 days.

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CPC H04R 1/00; H04R 1/1041; H04R 3/00; H04R 5/04; H04R 5/033; H04R 2420/07
USPC ... 381/74, 309, 370, 371, 383, 384, 72, 123, 381/104, 107, 334, 59; 455/569.1, 575.1, 455/575.2

See application file for complete search history.

(57) **ABSTRACT**

Dual mode headphones, and methods for constructing the same are provided. Headphones can be connected to an electronic device to provide an audio output. The headphones can include a transducer or other component for providing sound waves at appropriate levels near a user's ear. To provide audio as a speaker, however, circuitry in the headphones can include a powered amplifier that may be selectively used. The headphones can be moved between a first, in-ear position and a second, speaker position. A sensor in the headphones can detect the current position of the headphones, and can change the mode of the circuit to correspond to the detected current position. For example, the sensor can change between an in-ear mode in which the amplifier is bypassed and a speaker mode in which the amplifier is powered and used. In some cases, the headphones can include a sensor for preventing the speaker mode when the headphones are positioned near a user's ears.

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29 Claims, 8 Drawing Sheets

